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# CREMATION

AS THE

## Only Sanitary Method of Disposing of the Dead.

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## CREMATION AS THE ONLY SANITARY METHOD OF DISPOSING OF THE DEAD.

By W. F. McNUTT, M.D., M.R.C.S. (Edin.), L.R.C.P., Professor of the Principles and Practice of Medicine in the University of California.

It is not within the province of this article to give the history of the various methods of disposing of the dead. It becomes necessary, however, to say a few words on this aspect of the subject, in order to show that the treatment or disposal of the dead is not a matter of ethics, or a question of morals or religion. The methods of disposing of the dead in all countries is a matter of sentiment, superstition, usage, and necessity. But by all civilized peoples it should be dealt with as a purely sanitary measure. A reference to the history is the more necessary, as so many of the English-speaking people look upon inhumation, or burial of the dead, as a Christian rite—part of the Christian religion—and that all other methods of disposing of the dead are only to be practiced by pagan or heathen peoples. While, as a matter of fact, Christian nations do, at the present time, mostly bury their dead, the nation of all others that is most wedded and prejudiced in favor of inhumation, and that has practiced this method for hundreds of years before the Christain religion was ever dreamt of, is the Chinese. Neither history nor tradition reveals any information of the time when the Chinese disposed of their dead by any other method. At the present time their strong attachment for inhumation seems to depend upon the mere superstition that misfortune will follow the family whose dead are not at rest in the ground; and they carry their superstition to the point of insisting that no other ground than that of China can fulfill the requirement. To whatever land he may wander, in whatever land he may die, it is the sacred duty of the surviving friends to see that his bones (at least) find their final resting place in the land of his birth—in the Flowery Kingdom—and near some place that was dear to him in the days of his childhood.

In Japan, cremation is practiced by the Monto sect; but Shintos bury, while the aboriginal tribes in the remote north have been known to dry or desiccate the body, and subsequently bury it. The ancient Peruvians dried the bodies of the dead in the sun, and finally buried them in mounds. A tribe in South Australia places the dead body at the top of their huts, and keep up fires until the body is desiccated, when it is hidden in the trees. Some of our North American Indians dry their dead by exposure to the sun. The Syrians were known to place their dead at the disposal of wild dogs; while the Parsees for hundreds of years have had their "Towers of Silence," upon which they place their dead, and bury only their bones when the birds of prey have devoured the flesh. The Hindoos not infrequently place a dead body on the bank of the river, to be disposed of by river monsters. Many Kaffir tribes give their dead to the wild beasts; the Egyptians embalmed; the Hebrews mostly entombed; while the Hindoos, Greeks, and Romans cremated. Sea-burial is practiced to some extent, especially among island aborigi-

nees, while deep-sea burial has been recommended by several sanitarians to obviate the harmful effects of inhumation. One writer (Viritz) recommended that dead-ships be kept on the coast, and that daily departures be made for mid-ocean, where the bodies shall be committed to the deep. Water burial, however, is not likely to be practiced to any great extent, and many objections might be advanced against it. It has been thought by some that bodies might be petrified; it has been seriously considered in Germany whether bodies might not be encrusted in cement and placed in a cement sarcophagus, and cement in a fluid state poured about it—and all for no better purpose than to find some method of delaying the inevitable decomposition, of delaying the devolvement of the body into its ultimate constituents, which the laws of nature demand, the vegetable kingdom requires, and God himself has willed.

Seeing, then, that it is appointed that all must die, and that dust to dust sooner or later is the inevitable destiny of the body, whether buried in the ground, or deposited in the ocean, or hid away in the cave, or desiccated by heat, or placed upon the hilltop or in the tower of silence for the birds of the air, or exposed to the beasts of the fields, or piled in a Huacas, or burned by fire, or surrounded by the stony sarcophagus, or embalmed in all the balsams of the Orient with all the cunning and knowledge of the Egyptians, is it not, then, wise and reasonable to dispose of the body in the manner that its decomposition will be the least injurious to the living? The decomposition of animal matter on the surface of—or a few feet under the surface of—the earth, in the air, or water is accompanied by odors that are repulsive and horrible, and by gases and micro-organisms that are deadly destructive to human and all animal life. Could we read the cause of every death we would learn that millions of deaths have resulted from the putrefaction of the buried dead. With the recent developments of bacteriology we have learned that micro-organisms are the cause of the acute infectious diseases, and that these insatiable destroyers of human life do not die with their victims, but infest the earth above and about the grave; they find their way to the surface; they come forth more terrible than an army with banners; are scattered broadcast on the wings of the wind, and are carried to and fro by the birds of the air. Science has taught us this lesson, and yet, in obedience to superstition, to usage, and to sentiment, we continue to bury our dead; we fill and surround our cities with putrefying bodies, which contaminate the air we breathe, pollute the water we drink, and poison the food we eat.

If the members of the State Board of Health will permit me, I would like, in this connection, to suggest that they would have an investigation made to determine the relation of the water supply of the State to the burial grounds. Two or three years ago there was an endemic of malignant diphtheria on the Point Lobos road. I found that the families afflicted were using water from a surface well within a few hundred feet of the Odd Fellows' Cemetery. As you all very well know, burial is still permitted in San Francisco, and almost in the heart of the city. The distance from Laurel Hill Cemetery to the City Cemetery, where the indigent and Chinese dead are buried, is but a few blocks. You all perhaps do not know that between these two cemeteries there is a little lake, which is used as a water catch, and water to-day, strange as it may seem, is being served out of that horrible place to the citizens of San Francisco—simply seepage from the two graveyards. A few days ago I passed

through Cloverdale, and noticed that the graveyard was on a knoll on the bank of the Russian River, at the foot of which the citizens pumped their water supply from the river. How many graveyards there are on the banks of this river, and how many towns take their water supply from it, I do not know. The people of the towns and villages throughout the State generally select a hill or knoll near by for the cemetery, without the slightest regard to its relation to their water supply. Probably hundreds of lives are being sacrificed by this insanitary procedure.

The neighborhood of burial grounds is proverbial for headaches, diarrhoea, and ulcerated sore throats. According to a report of the French Academy of Medicine, the putrid emanation from Père-la-Chaise, Montmartre, and Montparnasse have caused frightful diseases of the lungs, to which numbers of both sexes fall victims every year. It was proposed by Mr. Forcroy to analyze the foul gases evolved from bodies which had been interred in this over-saturated soil; but no grave-digger would venture to assist in its collection, because it resulted in almost sudden death if inhaled in the concentrated form near the body, and even at a distance, when diluted and diffused through the atmosphere, produced depression of the nervous system and an entire disorder of its functions. Professor Selmi, of Mantua, has lately discovered in the strata of air which has remained during a time of calm for a certain period over a cemetery, organisms which considerably vitiate the air, and which are dangerous to life. When the matter in question was injected under the skin of a pigeon, a typhus-like ailment was produced and death ensued on the third day. According to the Hon. Dr. Lyon Playfair's report to Parliament it is stated: "In most of our churchyards the dead are harming the living by destroying the soil, fouling the air, contaminating water springs, and spreading the seeds of disease. I have officially inspected many churchyards and made reports on their state, which, even to re-read, make me shudder. But the later discoveries of science point more strongly to other dangers, arising still more directly from the burial of the dead. Every year records new facts identifying the causes of certain of the most familiar types of contagious diseases with the presence of minute organisms (bacteria), the absorption of which into the blood, or even in some cases of the alimentary canal, suffices to reproduce the dangerous malady. One of the most deadly scourges to our race, viz.: tubercular disease, is now known to be thus propagated. The poisons of scarlet fever, typhoid, smallpox, diphtheria, malignant cholera are undoubtedly transmissible through earth from the buried body by more than one mode."

The Rev. S. Long, of Calcutta, says: "The Mohammedan cemeteries of Calcutta have long been a crying evil and the nurseries of cholera, fever, and dysentery." Dr. Edmund Parkes, Professor of Military Hygiene in the British Army Medical School, in his work on hygiene, condemns severely the practice of the burial of the dead. "Burying in the ground," he says, "is the most unsanitary of all the plans of disposing of the dead. The air over cemeteries is constantly contaminated and the water in the neighborhood highly impure, hence the dangers to the population in the vicinity of graveyards."

Sir Henry Thompson says: "I affirm that by burning we arrive in one hour without offense or danger at the very stage of harmless result which burying requires years to produce; but an infinity of mischief may happen by burial and none can happen by cremation." It is

estimated that 32,000 deaths occur annually for every million of people. London, with nearly 5,000,000, buries in and about it at least 150,000 annually, and if the body is in the process of decomposition for only about fifteen years, there are about 2,250,000 in the process of putrefaction, in the soil of London and its neighborhood. For this purpose over two thousand acres of land are in use. The Bishop of Manchester, when consecrating a cemetery, said: "Here is another one hundred acres of land withdrawn forever from the food-producing area of this country. Cemeteries are not only becoming a difficulty, an expense, and an inconvenience, but an actual danger. I hold that the earth was made not for the dead, but for the living. No intelligent faith can suppose that any Christian doctrine is affected by the manner in which, or the time in which, this mortal body of ours crumbles into dust and sees corruption." Dr. Waller Lewis, in his report on excavations that had been conducted under churches in London, said that "the many phases of decay were varied, horrible, and a disgrace to any civilization." But it is needless to multiply evidence to show that with our present knowledge of the propagation of diseases, to allow a body to be buried in the ground in a city is a criminal assault against the lives of citizens, for which the authorities should be held responsible.

Dr. Koch, the renowned bacteriologist, says: "The blood of animals dying from splenic fever may be dried and stored for years and then pulverized into a powder, and still the disease germs survive with power to produce infection." The only manner of disposing of the dead without injury to the living is by our modern scientific method of incineration. With the history of cremation as practiced by the ancients, by the Orientals, and by other semi-civilized people at present, we do not propose to speak. Science has done much for the nineteenth century; but in no department of thought has it exhibited greater activity or made more progress than in the department which has for its object the discovery of the causes, prevention, and cure of disease. What might be called the renaissance of cremation (that is, the scientific methods at present adopted in Europe and America) was inaugurated in Italy; and most of the literature on the subject is in Italian, the Italians being the first European people to introduce it. It is only about twenty years since Italy commenced cremating, and less than that since the first crematory was built in Germany, France, England, or America; yet in these few years cremation has gained a firm footing in all these countries. The increase in the number of bodies that are being cremated each year is very considerable. Many new crematories are being built in Europe and America, and in conservative England cremation societies and cremations are rapidly increasing.

Most of the objections urged against cremation are the offsprings of sentiment, superstition, and usage. It is called a pagan practice, unchristian, revolting to our senses, etc. Says the Rev. Dr. Howard Henderson, of Cincinnati: "It would be a bold man who would affirm the prescription for a divine mandate for earth-burying or a divine prohibition of cremation. The method employed is a mere matter of custom, and to dogmatize it into a religious creed would be a profanation of ecclesiastical prerogative." The objection that has been recognized by the advocates of cremation as serious is the one that in the case of poisoning all traces of evidence would be destroyed by incineration, and the murderer might go free without even a trial. This objection has

been greatly overestimated; it is not as serious by any means as has been urged by the enemies of cremation and as has been granted by its friends. If a supposed murderer should occasionally get off scot free without a trial, it might not be so serious a matter to taxpayers, or so serious a matter for society, as to have hundreds of murderers who have been fairly convicted of murder by the evidence after a long and expensive trial set free by juries. Again, there is perhaps not one death in ten thousand where there can by any possibility be even a suspicion of poisoning; and again, every health office should have a medical officer at its disposal to verify the physician's certificate as to the cause of death in every case before a permit is given to dispose of the body. If an inquest be considered necessary, or if there be any suspicion of any such necessity, an examination should be made then. Mr. Danford Thomas made a very careful and systematic inquiry in England and Wales as to the number of exhumations for the past twenty years which involved questions of poisonings. He found that the exhumations did not average one yearly; yet the number of deaths in England and Wales is about eight hundred thousand.

Could anything be more absurd than to oppose cremation on the grounds that it deprives the officers of the law of the chances of exhuming a body in cases of suspected poisoning; that it lessens the chances of convicting the murderer? In burying the dead they are but depositing poisonous masses beneath the surface of the earth, which experiment, reason, and science teaches, poisons thousands of living beings. The one who administers poison to his fellow is committing a crime. The authorities who allow the burial of dead bodies in the midst of populated cities are permitting crime. And besides, disinterments are useless, except in the case of mineral poisons. The poisons that are most likely to be used, such as prussic acid, morphine, aconite, strychnine, etc., soon decompose after the burial of the body, and not a trace of them could be found if the exhumation is any considerable time after burial. And it has become almost a constant habit of injecting bodies with embalming fluid before burial, which renders the detection of poisons impossible. Under no circumstances should an undertaker be permitted to embalm or inject embalming fluid into the body, until he has received a permit from the health office for the disposal of the body. The chances of detecting poisons are so lessened by burial, that cremation, instead of protecting poisoners, would render their detection more certain by necessitating greater care on the part of the health department as to the cause of death; let them make an examination at once in every case where the cause of death is not absolutely certain. This disposes of the medico-legal question.

The history of cremation in America is interesting. Crematories, cremation societies, and the number of bodies cremated, are rapidly increasing in the United States. We have two crematories in California—one in Los Angeles, which has been erected since 1887; one in Cypress Lawn, San Mateo County. The latter, though only four months in operation, has cremated nearly a hundred bodies. It is but nine years since the first human body was cremated in the State of New York. At the present time, the United States Government has, on an island in New York harbor, a crematory for the incineration of the bodies of those who die of contagious diseases; while New York City, Buffalo, Troy, and many other cities have their crematories. Many of

the large cities in other States now have their crematories, and it is pleasing and safe to state that inhumation, or earth burial, is beginning to give place to the safer, less expensive, and altogether more desirable method, cremation.

Up to twenty years ago inhumation was the only method of disposing of the dead practiced by Christian nations. Inhumation will never again be the only method practiced by Christians in the disposal of their dead. In the meantime, dead bodies will be deposited in the ground, and in some cases within the city limits, where the putrefaction and micro-organisms will continue to poison the air, the water, and the ground. Thousands of lives will yet be sacrificed to superstition, sentiment, and usage, but at last the fittest, like truth, will triumph. Philadelphia no longer maintains that disgraceful and dangerous plot, viz.: a potter's field. There the indigent dead are cremated. Philadelphia sets a good example and one that should be followed by every city in the United States. Cremationists do not wish to force their method upon any one; they simply want that every one shall be free to choose without prejudice. They do believe, however, that municipal authorities should prohibit the burial of the dead within city limits; that it is criminal to ignore the established facts of science; that every city should cremate its indigent dead; and urge that in case of death from contagious diseases the body should be cremated. Municipal authorities arrogate the right of, and enforce quarantine, to the end that a person suffering from a contagious disease may not propagate it to others. Does the responsibility of the municipal officers cease when the victim of a contagious disease dies? Is it reasonable and just that a body should be disposed of in a manner that will propagate more disease and cause more deaths than could have been possible during the attack of the disease? Humanity, sentiment, and affection dictate that our dead be treated with reverence and respect; but the living demand and are entitled to protection. The sanitarian is contending for pure air, pure water, and pure earth. To those who call incineration revolting, could they once witness the exhumation of a body that has been buried a year or two, they would never be buried themselves, nor advise their friends to be buried. One experience would dispel all sentiment; the mind would ever afterward revolt against the usage. The eye cannot behold, nor the mind imagine, a more repulsive, shocking, or hideous sight. The grave is a horrid, grim, loathesome, charnel house, where worms desecrate the body and feast upon corruption. How abhorrent to the imagination! It would require a Milton or a Dante to depict it. In modern cremation there is nothing repulsive. The body wrapped in white linen is placed in the superheated fire-clay chamber, where no flame comes in contact with it. All that is liquid or putrefiable disappears in a few minutes, and there is left the ashes—which are inodorous, inoffensive, and without the germs of disease—to be placed in the sacred urn and deposited in the columbarium of the church. It is simply a last baptism by incandescent heat; a purification by fire, whereby the corrupt takes on incorruption. As the mortal takes on immortality, so the corrupt takes on incorruption; as the one robs death of its victory, the other robs the grave of its horrors and dangers. Immortality of the soul, incorruptibility of the body—man's final triumph over death and the grave.